U. S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Partula gibba*

COMMON NAME: Humped tree snail; akaleha

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: September 2005

STATUS/ACTION:

____ Initial 12-month Petition Finding:
- ____ not warranted
- ____ warranted
- ____ warranted but precluded (also complete (c) and (d) in section on petitioned candidate species- why action is precluded)

____ Species assessment - determined species did not meet the definition of endangered or threatened under the Act and, therefore, was not elevated to Candidate status

____ New candidate

_X_ Continuing candidate
- ____ Non-petitioned
- _X_ Petitioned - Date petition received: May 11, 2004
  - ____ 90-day positive - FR date:
  - __X__ 12-month warranted but precluded - FR date: May 11, 2005
  - __N_ Did the petition requesting a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES:

a. Is listing warranted (if yes, see summary of threats below)? yes

b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? yes

c. If the answer to a. and b. is "yes", provide an explanation of why the action is precluded. We find that the immediate issuance of a proposed rule and timely promulgation of a final rule for this species has been, for the preceding 12 months, and continues to be, precluded by higher priority listing actions. During the past 12 months, most of our national listing budget has been consumed by work on various listing actions to comply with court orders and court-approved settlement agreements, meeting statutory deadlines for petition findings or listing determinations, emergency listing evaluations and determinations and essential litigation-related, administrative, and program management tasks. We will continue to monitor the status of this species as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures. For information on listing actions taken over the past 12 months, see the discussion of "Progress on Revising the Lists," in the current CNOR which can be viewed on our Internet website (http://endangered.fws.gov

____ Listing priority change
Former LP: ____
New LP: ____

Date when the species first became a Candidate (as currently defined): November 15, 1994

____ Candidate removal: Former LP: ____

____ A - Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.
____ F - Range is no longer a U.S. territory.
____ I - Insufficient information exists on biological vulnerability and threats to support listing.
____ M - Taxon mistakenly included in past notice of review.
____ N - Taxon may not meet the Act's definition of "species."
____ X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Snails; Family Partulidae (snail)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Guam; Commonwealth of the Northern Mariana Islands (Islands of Rota, Aguiguan (also known as Agujuan or Goat Island), Tinian, Saipan, Anatahan, Sarigan, Alamagan, and Pagan).

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Guam; Commonwealth of the Northern Mariana Islands (Islands of Rota, Aguiguan, Tinian, Saipan, Anatahan, Sarigan, Alamagan, and Pagan).

LAND OWNERSHIP
All but two of the known sites are on lands owned by private land owners. The other two sites are on lands owned by the U.S. Military and by the U.S. National Park Service.

LEAD REGION CONTACT: Paul Phifer (503) 872-2823, paul_phifer@fws.gov

LEAD FIELD OFFICE CONTACT: Pacific Islands Fish and Wildlife Office, Lorena Wada (808) 792-9400, lorena_wada@fws.gov

BIOLOGICAL INFORMATION:

Species Description: The shell of the humped tree snail (*Partula gibba)* is described in Pilsbry (1909-1910) as "conic-ovate, perforate, rather solid, striatulate, pellucid, engraved longitudinally with equal lines, white or flesh-colored, the spire acute, rose-red, the suture milk-white; epidermis thin and refescent. Whorls 4 ½, the last swollen, gibbous, larger than the rest. Aperture long-ovate, subquad-rangular; peristome reflexed, broadly dilated, white. Var. ruddy-black."

The biology of the partulid tree snails of the Mariana Islands has not been studied in detail. However, general information on the biology of closely related partulid tree snails have been published and reviewed by Cowie (1992) and the biology of these species are very similar. As with all terrestrial pulmonate snails, the Mariana Islands tree snails are hermaphroditic. In general, partulid snails begin reproducing in less than 12 months and may live up to five years. Up to 18 young are produced each year and some species, such as the humped tree snail of the Mariana Islands, may be self-fertile. While most terrestrial snails lay eggs, the partulid tree snails give birth to fully developed young. The snails are generally nocturnal, living on bushes or trees and feeding on decaying plant material. There are no known natural predators of these snails, although many of these species are currently threatened by alien predators.

Taxonomy: The genus *Partula* has four species found only in the Mariana Islands, and 94 additional species recorded from other Pacific islands. The humped tree snail was first collected on Guam in 1819 by Quoy and Gaimard during the Freycinet Uranie expedition of 1817-1819 (Crampton 1925). Crampton's 1925 taxonomic write up is the most recent and accepted taxonomy for this species.

Habitat: The humped tree snail prefers cool, shaded forest habitats (Crampton 1925; Cowie 1992; Smith 1995) with high humidity and reduced air movement that might otherwise promote excessive water loss. Crampton (1925) described the habitat requirements of the partulid trees snails of the Mariana Islands as: "a sufficiently high and dense growth to provide shade, to conserve moisture, and to effect the production of an rich humus. Hence the limits to the areas occupied by Partulae are set by the more ultimate ecological conditions which determine the distribution of suitable vegetation." Crampton (1925) further describes the intact structure of native Mariana forests as having four general levels: the high trees; the shrubs and *Panadanus*; the cycads and taller ferns; and the succulent herbs. He notes that the Mariana Islands partulid tree snails preferentially live on subcanopy vegetation and do not use the high canopy trees. The habitat requirements for the humped tree snail were numerous in the Mariana Islands prior to World War II. They include coastal strand vegetation, forested river borders, and lowland and highland forests (Crampton 1925).

Historic and Current Range/Distribution: The three genera and 123 tree snail species of the family Partulidae are restricted to the high-elevation Pacific islands of Polynesia (excluding Hawaii), Melanesia, and Micronesia (Cowie 1992; Paulay 1994). The Mariana archipelago historically supported five species of partulid tree snails, and represents the northwestern limit of the geographical range of the Partulidae.

The humped tree snail is the most widely distributed tree snail in the Mariana Islands and is known from Guam, Rota, Aguiguan, Tinian, Saipan, Anatahan, Sarigan, Alamagan, and Pagan. Upon its discovery, this snail was considered to be the most common tree snail on Guam, occupying the branches of trees in cool and shaded habitats (Crampton 1925). Now, however, this species is considered to be rare throughout its range (Hopper and Smith 1992). Currently there are 14 known populations on eight islands that still support populations of the humped tree snail. The best estimate for the total number of remaining snails is under 2,600. On Guam and Rota, it has gone from being widely distributed and super abundant to being highly localized and rare. Details follow regarding the species in various parts of its range.

Crampton (1925) found the humped tree snail at 33 of the 39 sites and recorded between 2 and 412 snails at each site; a total of 3,204 individuals were recorded. The actual population sizes were probably considerably larger since the purpose of Crampton's collections was to evaluate geographic differences in shell patterns and not to assess population size. Since the work of Crampton (1925), no significant evaluation of the humped tree snail occurred until the 1980s and 1990s. In 1989, Hopper and Smith (1992) resurveyed 34 of Crampton's 39 sites on Guam plus 13 new sites. None of the 34 sites resurveyed by Hopper and Smith (1992) still supported these snails.

Of the 13 new sites surveyed by Hopper and Smith (1992), only one supported a small population of the humped tree snail. Additional surveys by Smith (1995) found two additional populations of the humped tree snail. U.S. Fish and Wildlife Service (Service) surveys of 15 sites on the Guam Naval Magazine found no additional populations, while ground shells of tree snails were found in abundance at all locations (S. Miller and A. Asquith, Service, Pacific Islands Office, pers. comm. 1996). All three of the Guam populations of the humped tree snail are in the same coastal area. One has declined from approximately 100 snails in 1991 to 20 snails in 1995. Two of the Guam populations are described as substantial and probably total 500 to 1,000 individuals (Miller and Asquith, Service, pers. comm. 1996).

Crampton (1925) surveyed eight sites on the island of Saipan, collecting 6,698 humped tree snails. Surveys in 1991 by Smith and Hopper (1994) could not find any snails at 12 sites visited on the island. Only two of Crampton's original eight sites still had the native vegetation needed to support the tree snails. The shells of dead *Partula* tree snails were found at all the survey sites. In 2002, a small population was identified on the Quitugua property in the village of As Teo (C. Kessler, USFWS, pers. comm. 2002). In 2004, an additional single small population of the humped tree snail was found in a mangrove wetland at the American Memorial Park on Saipan (National Park Service 2004).

The island of Tinian has not been surveyed in recent years. However, the presence and abundance of a predatory flatworm coupled with severe loss of habitat prior to, during, and since World War II, make the continued existence of the humped tree snail on Tinian unlikely (Smith 1995).

The island of Rota was surveyed for *Partula* tree snails (Smith 1995; Miller and Asquith, pers. comm. 1996). Of 25 surveyed sites, only five supported populations of the humped tree snail. The largest of these may have had up to 1,000 snails. However, this population was located along the main road of Rota and was subsequently cleared for development. The four other populations are small and total less than 600 snails (Smith 1995).

The island of Aguiguan is also a historic site for the humped tree snail. In 1985, seven adult snails were collected from the west end of the island (Smith 1995). In 1992, snails were observed at three locations on the island (Craig and Chandran 1992). A second survey in 1992 reported two humped tree snails on the northwest terrace of the island (Smith 1995).

The humped tree snail has also been reported from the remote northern islands in surveys done in 1949 and in 1994. These small volcanic islands are difficult to access and are currently uninhabited, although some are used for agricultural or military activity. The species was first reported in 1949 from six locations (28 adult snails plus numerous juveniles, with 17 adults from one location) on the island of Pagan in a thin breadfruit agro-forest and from five locations (339 adult snails plus numerous juveniles, with 49 adults at a typical site) on Alamagan in wet forest (Kondo 1970). These observations probably represent a single fragmented population on each of these small islands.

In 1994, Kurozumi reported snails from Anatahan (19 snails from 3 locations, with 14 snails from a single site) and Sarigan (102 snails from seven locations, with 53 snails from a single site), which are between the more northern Alamagan and the more southern Saipan. Kurozumi (1994) also reported the continued existence of the humped tree snail on Alamagan (123 snails from 7 sites, with 58 from a single site) and Pagan (22 snails from a single site). As with the Pagan and Alamagan populations, the snails on Anatahan and Sarigan are probably part of two fragmented populations, one on each island.

The humped tree snail continues to survive on these northern islands, although since 1949 the species seems to have declined on Pagan and Alamagan Islands by over 70 percent for individuals, and by approximately 27 percent for populations. On Sarigan the population appears to be increasing as a result of the removal of ungulates. In 2005, these snails were observed to be abundant in the native forest located on the high plateau in the center of the island (C. Kessler, pers. comm. 2005). On Anatahan, however, the situation is worse with possibly the local extirpation of this population due to volcanic eruptions during 2003-2005. These eruptions have removed an estimated 95% of all vegetation and the effect on the snails is unknown but presumed to be negative (C. Kessler, pers.comm. 2005).

THREATS:

A. <u>The present or threatened destruction, modification, or curtailment of its habitat or range</u>. The humped tree snail prefers cool, shaded forest habitats (Crampton 1925; Cowie 1992; Smith 1995) with high humidity and reduced air movement that might otherwise promote excessive water loss. These forest habitats include coastal strand forest, forested river borders, and both lowland and highland native forests (Crampton 1925). Currently, habitat for this species can still be found within its range in the Mariana Islands. However, it has severely declined or has been degraded due to extensive forest clearing for agriculture and development, introduced weed species, and introduced feral ungulates over the last century.

Open agricultural fields and other areas prone to erosion were seeded with tangantangan (*Leucaena leucocephala*) which grows as a single species stand with no substantial understory. The micro-climate in these areas now occupied by tangantangan is dry, with little accumulation of leaf litter humus, and is particularly unsuitable as partulid tree snail habitat (Hopper and Smith 1992). In addition, native forest cannot reestablish and grow where this alien weed has become established (Hopper and Smith 1992).

Remaining populations of the snail have been threatened by ongoing development. For example, a new road was cut within the coastal area containing the remaining three Guam populations of the snail, and it is believed that the decline in this population of snails may be due to the indirect effects of this road (Miller and Asquith, Service, pers. comm. 1996).

Throughout the Mariana Islands, feral ungulates (pigs [*Sus scrofa*], Philippine deer [*Cervus mariannus*], cattle [*Bos taurus*], water buffalo [*Bubalus bubalis*], and goats [*Capra hircus*]) have caused severe damage to native forest vegetation by browsing directly on plants, causing erosion (Marshall *et al*. 1995, Kessler 1997), and retarding forest growth and regeneration (Lemke 1992). This in turn reduces the quantity and quality of forested habitat for the humped tree snail. Currently, populations of feral ungulates are found on the islands of Guam (deer, pigs, and water buffalo), Rota (deer and cattle), Aguiguan (goats), Tinian (cattle), Saipan (deer, pigs, and cattle), Anatahan (pigs and goats), Alamagan (goats, pigs, and cattle), and Pagan (cattle, goats, and pigs). Goats were eradicated from Sarigan in 1998 (Zoology Unlimited LLC 1998) and efforts are underway to remove goats and pigs from the island of Anatahan (C. Kessler, pers. comm. 2005). The humped tree snail has increased in abundance, likely in response to the removal of all the goats.

In addition to human related habitat alteration, natural events such as typhoons and volcanic activity have also impacted the humped tree snail habitat. The island of Anatahan has been experiencing volcanic eruptions, beginning in 2003 and continuing into the earlier part of 2005. Much land areas were buried by a thick ash layer. These eruptions have removed an estimated 95% of all vegetation and the effect on the snails is unknown but presumed to be negative (C. Kessler, pers.comm. 2005). Pagan also has also experienced volcanic activity as recently as 1993.

Typhoons are a common occurrence in the Mariana Islands. Guam, for example, has been affected by typhoons in 37 of the last 50 years (based on records compiled by U.S. Navy, Joint Typhoon Warning Center). During the 1990's Guam experienced 20 typhoons, and supertyphoons (having gusts exceeding 240 kilometers (150 miles) per hour) occur with regularity (about once every 5 to 10 years). There is some evidence that the frequency of severe storms (estimated gusts exceeding 160 kilometers (100 miles) per hour) is increasing in the Mariana Islands. With reference to Guam, the historical record shows increasing numbers of mild (estimated gusts in the range of 80 to 160 kilometers (50 to 100 miles) per hour) and severe storms over the last three centuries, as well as in just the last decade.

These storms have been known to defoliate forested areas and down trees which can impact tree snail populations. For example, in August of 2004, Typhoon Chaba stalled 25 miles north of Rota for several hours, downing trees and defoliating large sections of the forested areas, especially on the windward side of the island. Vegetation changes associated with this storm have opened up forested areas that were excellent habitat for partulid tree snails. These open forests suffer from changes in microhabitat, such as desiccation, that make the continued survival of snails unlikely. These changes continue to occur today with each successive typhoon.

B. Over- utilization for commercial, recreational, scientific, or educational purposes. Over-utilization is not known to be a factor currently affecting any of the partulid tree snails from the Mariana Islands. Future overutilization of this species is not anticipated.

C. Disease or predation.
Predation by the alien rosy carnivore snail (*Euglandina rosea*) and the alien Manokwar flatworm (*Platydemis manokwari*) is a serious threat to the survival of all four species of partulid tree snails from the Mariana Islands. The predatory rosy carnivore snail is native to the southeastern United States, and was introduced into the Mariana Islands in 1957 (Eldredge 1988). Since being introduced, this voracious predator of snails has been dispersed by humans throughout the main islands. The rosy carnivore snail was imported to these and other Pacific islands as a biological control agent for another alien snail, the giant African snail (*Achatina fulica*), which is an agricultural pest. Field observations have established that the rosy carnivore snail readily feed on native Pacific island tree snails, including the Partulids of the Mariana Islands (Tillier and Clarke 1983; Murray *et al*. 1988; Miller 1993) and the Hawaiian achatinellid tree snails (Hadfield *et al*. 1993). A study of the diet of the rosy carnivore snail on the island of Mauritius in the Indian Ocean showed that this alien predator preferred native snails over the targeted alien giant African snail (Griffiths *et al*. 1993). On some or all of these tropical islands, the rosy carnivore snail has expanded its normal terrestrial feeding behavior to include native snails found in arboreal habitats (Murray *et al*. 1988; Hadfield *et al*. 1993; Miller 1993).

The rosy carnivore snail has caused the extinction of many populations and species of native snails throughout the Pacific islands (Tillier and Clarke 1983; Murray *et al*. 1988; Hopper and Smith 1992; Hadfield *et al*. 1993; Miller 1993). Where it still resides, the rosy carnivore snail represents a significant threat to the survival of native Mariana Islands snails, including the four remaining partulid tree snails: the humped tree snail (*Partula gibba*), the Langford's tree snail (*Partula langfordi*), the Guam tree snail (*Partula radiolata*), and the fragile tree snail (*Samoana fragilis*).

Predation on native partulid tree snails by the terrestrial Manokwar flatworm is also a threat to the long-term survival of these snails. This voracious snail predator was introduced into Guam in 1978 and has been spread by humans throughout the main Mariana Islands (Eldredge 1988). It has proven to be an effective biological control agent for the giant African snail, but has also contributed to the decline of native tree snails, in part due to its ability to ascend into trees and bushes that support native snails. Areas with populations of the flatworm usually lack partulid tree snails or have declining numbers of snails (Hopper and Smith 1992).

There are no conservation efforts being undertaken to alleviate these threats for this species.

D. The inadequacy of existing regulatory mechanisms.
Currently, no formal or informal protection is given to the humped tree snail by Federal agencies or by private individuals or groups. In 1996, the Government of Guam listed this species as endangered on Guam (5 GCA, Section 63205(c), "The Endangered Species Act of Guam").

E. Other natural or manmade factors affecting its continued existence.

Even if the threats responsible for the decline of this species were controlled, the persistence of existing populations is hampered by the small number of extant populations and the small geographic range of the known populations. This circumstance makes the species more vulnerable to extinction due to a variety of natural processes. Small populations are particularly vulnerable to reduced reproductive vigor caused by inbreeding depression, and they may suffer a loss of genetic variability over time due to random genetic drift, resulting in decreased evolutionary potential and ability to cope with environmental change (Lande 1988; Center for Conservation Update 1994). Stochastic physical events such as typhoons and droughts could eliminate one or more of the 13 remaining populations of the humped tree snail. This is especially true due to several life-history features of this and all other partulid tree snails (Cowie 1992): reproductive rates are low; eggs are not laid as in most terrestrial snails, but the young are born live; dispersal is very limited with most individuals remaining in the tree or bush into which they were born. All of these traits make these snails very sensitive to any random event that could lead to a reduction or loss of reproductive individuals.

There are no conservation efforts being undertaken to alleviate these threats to this species.

CONSERVATION MEASURES PLANNED OR IMPLEMENTED

The Guam Government Department of Agriculture (DOA) has listed the humped and fragile tree snails as endangered and the Pacific tree snail as threatened (see GovGuam DOA, Endangered Species Regulation 6, March 1992). As a result, humped, fragile and Pacific tree snails on Guam enjoy benefits similar to those afforded federally listed species with at least two differences. The Guam law does not provide for the designation of critical habitat, and the endangered and threatened species list must be renewed by the legislature each year.

The Guam National Wildlife Refuge (Refuge) was created on October 1, 1993, with additional lands incorporated in 1994 by cooperative agreements between the Service, the U.S. Air Force, and the U.S. Navy. This covers 19.6 percent of the total land area of the island of Guam, and includes one of the 14 remaining populations of the humped tree snail. The establishment and management of the Refuge on U.S. Navy and U.S. Air Force land provide a commitment for a "coordinated program centered on the protection of endangered and threatened species and other native flora and fauna..." Enactment of such a program by these agencies will contribute to the continued survival and recovery of humped, Pacific, and fragile tree snails on Guam, as important snail habitat is found within the Refuge boundaries.

A recently discovered population of this species was found in a mangrove wetland at the American Memorial Park on Saipan (National Park Service 2004). From 2001 to 2003, the U.S. Navy funded the removal of goats and pigs from the small volcanic island of Sarigan. The Navy is also currently funding a project to remove goats and pigs from Anatahan.

SUMMARY OF THREATS

The primary threats to this species are habitat loss and predation from nonnative snails. Goats have been eradicated from Sarigan and removal of goats and pigs are under way on Anatahan. While the humped tree snail appears to be increasing in numbers on Sarigan in response to removal of the goats, the snails on Anatahan have likely been extirpated due to the massive volcanic explosion which removed up to 95% of the vegetation on the island. There are no conservation efforts being done to alleviate the threat of nonnative snails to this species.

RECOMMENDED CONSERVATION MEASURES

LISTING PRIORITY

THREAT			
Magnitude	Immediacy	Taxonomy	Priority
High	**Imminent**	Monotypic genus	1
		Species	**2 ***
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate To Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude:

This species is highly threatened throughout its limited range by habitat loss and modification and by predation from nonnative predatory snails and flatworms. There are no efforts being taken to control or eradicate these threats. Habitat loss also continues due to the detrimental impacts of human development and nonnative ungulates on the native vegetation required by the humped tree snail. Goats were completely removed from Sarigan which has experienced an increase in snail abundance and goat and pig removal is occurring on Anatahan. The small number of individuals and the small number of populations also make this species very susceptible to the negative effects of stochastic events such as volcanic eruptions, typhoons, and storms. The population of humped tree snails on Anatahan is likely extirpated due to the massive volcanic explosion of the island and the resulting loss of up to 95 % of the vegetation on the island.

Imminence:

Threats to the humped tree snail from habitat loss and predation by nonnative predators are on-going and thus are imminent.

Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed? Yes

Is Emergency Listing Warranted?

No. The species does not appear to be appropriate for emergency listing at this time because the immediacy of the threats is not so great as to imperil a significant proportion of the taxon within the time frame of the routine listing process. In addition, one population on Guam is within the National Wildlife Refuge overlay and one on Saipan is within the National Park. If it becomes apparent that the routine listing process is not sufficient to prevent large losses that may result in this species' extinction, then the emergency rule process for this species will be initiated. We will continue to monitor the status of the humped tree snail as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures.

DESCRIPTION OF MONITORING

We conducted literature searches for recent articles on this species and contacted species experts, CNMI Division of Fish and Wildlife and University of Guam and University of Hawaii researchers regarding its current status. New information provided include the increased abundance of snails on Sarigan and the apparent extirpation of them on Anatahan due to the volcanic eruptions.

This level of monitoring is appropriate to update the status of the species because a thorough literature search was conducted as well as relevant species experts contacted. Information contained in this assessment form was verified and any updated information incorporated. This species is listed as critically endangered on the International Union for Conservation of Nature and Natural Resources Red Data List database (International Union for Conservation of Nature and Natural Resources database 2004).

List of Experts Contacted:

Name	Date	Place of Employment
Blaine Dicke	March 03, 2005	Guam DAWR
Aubrey Moore	March 03, 2005	University of Guam
Ross Miller	March 03, 2005	University of Guam
Barry Smith	March 03, 2005 & July 11, 2005	University of Guam
Laura Williams	July 11, 2005	CNMI Division of Fish and Wildlife, Saipan
Robert Cowie	July 11, 2005	University of Hawaii
Anne Brook	September 19, 2005	U.S. Fish and Wildlife Service

List of Databases Searched:

Name	Date
International Union for Conservation of Nature and Natural Resources	2004

COORDINATION WITH STATES:

We contacted CNMI Division of Fish and Wildlife by email with a request for any information on the species and sent copies of our candidate forms. No response was received. We also contacted Guam Division of Aquatic and Wildlife Resources. They informed us that they had no additional information.

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APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions or removal of species from candidate status, and listing priority changes.

Approve: Acting _____ 11/16/05
Regional Director, Fish and Wildlife Service Date

_____

Concur: _____ August 23, 2006
Director, Fish and Wildlife Service Date

Do not concur: _____ _____
Director, Fish and Wildlife Service Date

Date of annual review: 7/21/05
Conducted by: Lorena Wada, Pacific Islands FWO

Comments:

PIFWO Review
Reviewed by: Gina Shultz Date: 10/12/05
Assistant Field Supervisor, Endangered Species

Patrick Leonard Date: 10/11/05
Field Supervisor